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ACT-IR2002UL/ACT-IR4002US

IrReady™ FIR USB Adapter

User's Manual

ACT-IR2002UL

ACT-IR4002US

May 12, 2011
Version. 1.0.4
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Warning! Please Install Driver BEFORE you plug in the Dongle to USB port, for *MAC & all Windows OS*

FCC Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

WARNING-FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user authority to operate this equipment

NOTE: This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to Part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will nor occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Increase the separation between the equipment and receiver.

-Reorient or relocate the receiving antenna.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

This equipment is in the 2nd Class category (information equipment to be used in a residential area there to) and conforms to the standards set by the Voluntary Control Council For Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in such residential area.

When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

NOTE: Must be used with shielded cable only.

FOR YOU RECORDS

For your assistance in reporting this product in case of loss or theft, please record below the model number and serial, which are located on the bottom of the case. Please retain this information.

Model Number	**Serial Number**
Date of Purchase	**Place of Purchase**

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REVISION HISTORY

Revision History		
Revision	**Date**	**Comment**
1.0.0	6/26/2009	Initial released
1.0.1	6/25/2010	Windows 7 update and Added chapter for guide to update the driver manually in Windows XP / Vista / Windows 7
1.0.2	7/02/2010	Combined ACT-IR2002UL and ACT-IR4002US User's Manual
1.0.3	7/30/2010	Updated Driver and installation procedure for Windows O.S
1.0.3.1	8/4/2010	Added chapter of IrCOMM2K driver & Virtual COM port
1.0.4	5/12/2011	Updated to single click & silent installer driver for Win XP/Vista/Win7 32 & 64 bit OSes

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1 INTRODUCTION

ACT-IR2002UL & ACT-IR4002US are advanced Infrared USB adapters to replace the serial port peripheral through USB port.

ACT-IR4002US is the thumb size version of ACT-IR2002UL. The latter has build in USB cable while the former, like a flash disk, has only build in USB connector so that it becomes more compact to be carried. They are also the next generation of ACT-IR2000UL/ ACT-IR4000US respectively. You will find no any functional difference between them except the new generation has new driver and more flexible to use.

Features :

- Supports Win 98SE/ME/2000, Windows XP/ Vista/Windows 7(32 & 64 bit), Win CE 4.2 & 5.0 (USB host), Mac 10.x (both Intel & Power PC based) and Linux.
- WHQL certified.
- Fully compliant to USB specification 1.1 and IrDA specification 1.4
- Full-speed (12 Mbps) USB device operation
- Supports FIR (4Mbps), MIR (1.152 Mbps) and all SIR speeds (9.6, 19.2, 38.4, 57.6 and 115.2 kbps).
- Bus-powered device. Obtain power from USB port. No external power supply required.
- Low power consumption in standby mode (Standby current 20 mA).
- Not occupy PC's COM or Parallel port and has no complicated hardware port and resource setting and conflict, such as IO address / IRQ / DMA numbers.

2 PACKAGING CHECK LIST

The package includes:

A) ACT-IR2002UL	**B) ACT-IR4002US**
1. ACT-IR2002UL USB Dongle with built in USB cable. 2. Installation CD for Driver and User's manual.	1. ACT-IR4002US USB Dongle 2. USB Cable 3. Installation CD for Driver and User's manual.

3 SYSTEM REQUIREMENTS

1. Windows 98SE/ME/2000/XP/Vista/**Windows 7**, Win CE 4.2 & 5.0 (USB host), Mac 10.x (both Intel & Power PC based) and Linux
2. One unoccupied USB port.

4 BIOS SETUP

Before you use this device, you MUST enable your computer USB port in BIOS Settings.

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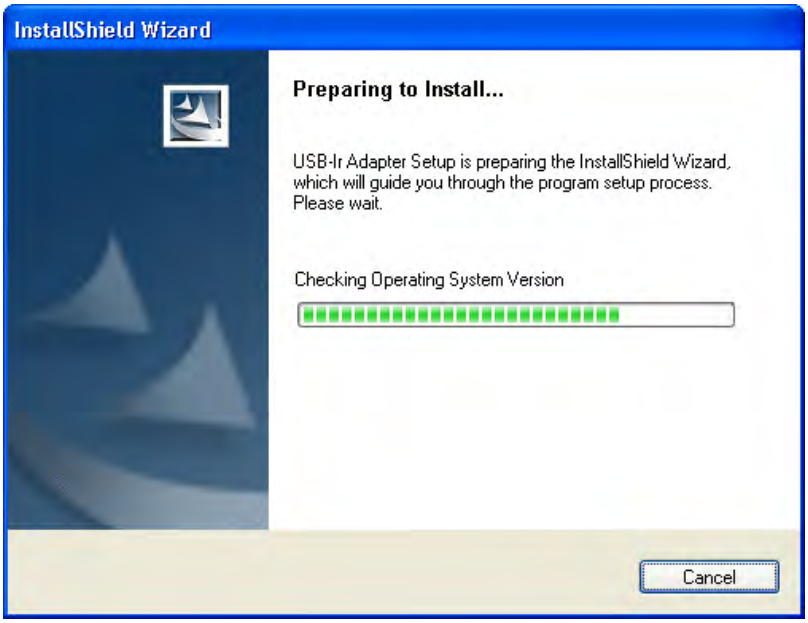
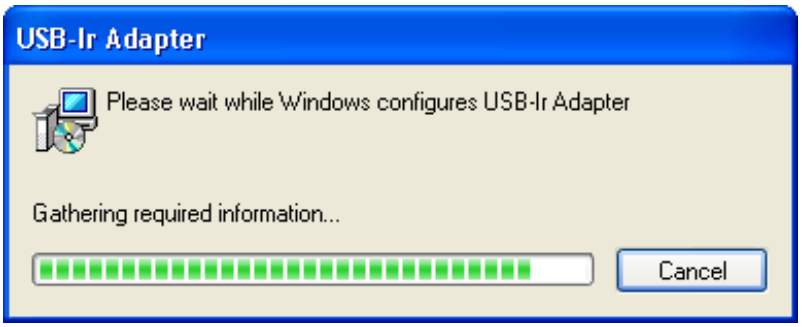
5 DRIVER INSTALLATION FOR WINDOWS XP/2000/ME/98SE

1. Insert the driver CD, It will automatically initialize the driver installation wizard as shown. Or manually browse CD to double click "setup.exe" for this installation.


InstallShield Wizard
Preparing to Install...
USB-Ir Adapter Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Checking Operating System Version
Cancel

2. The Installer will install ACT-IR2002UL / ACT-IR4002US driver without any user action. The installer will exit without any prompts after successful installation



3. Now plug the ACT-IR2002UL. / ACT-IR4002US dongle It will pop up a Bubble Window : "Found New Hardware" as shown in the figure. Then this bubble window will show "USB-Infrared Adapter" after completing this procedure.

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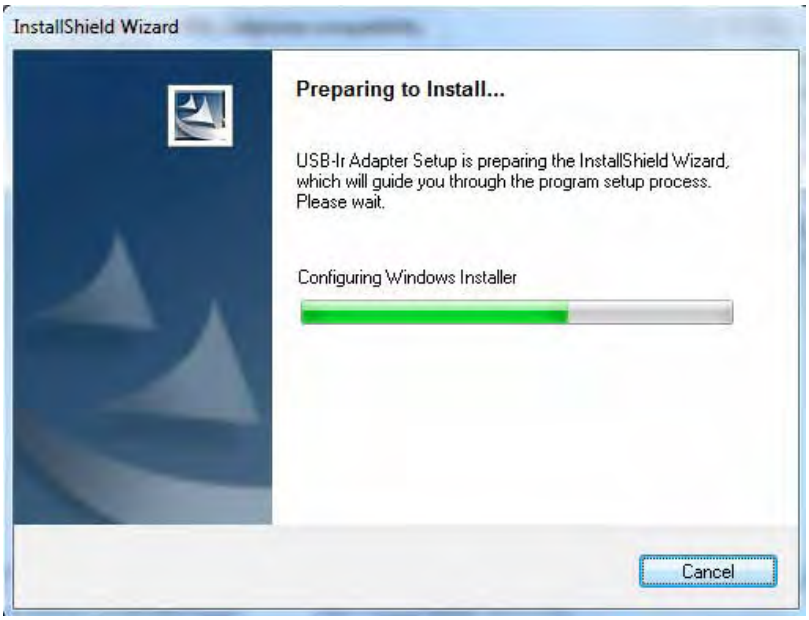
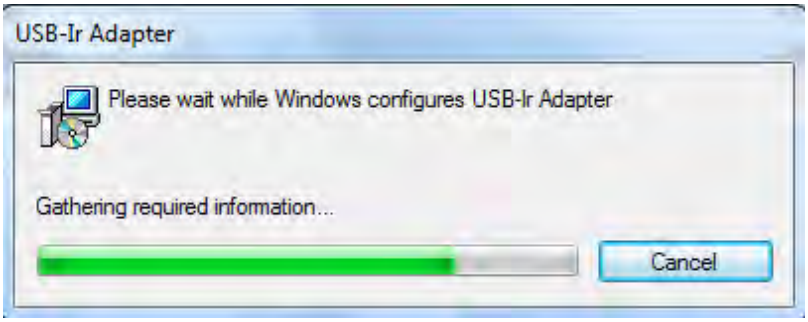
6 DRIVER INSTALLATION FOR WINDOWS 7/VISTA (32 & 64 BIT)

Note: Windows 7 has its Native drivers for you, you can just **Plug and Play and** Windows will auto find it**.** So you can skip below procedure. Yet you can also follow below procedure in case you fail to find the proper native driver.

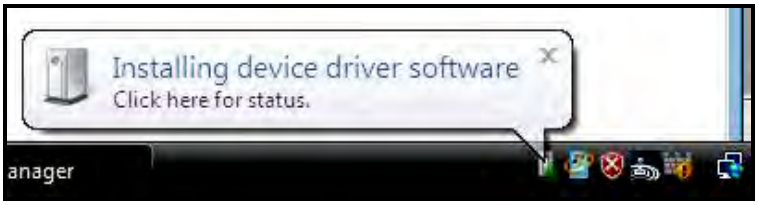
1. Insert the driver CD, It will automatically initialize the driver installation wizard as shown


InstallShield Wizard
Preparing to Install...
USB-Ir Adapter Setup is preparing the InstallShield Wizard, which will guide you through the program setup process. Please wait.
Configuring Windows Installer
Cancel

2. The Installer will install ACT-IR2002UL / ACT-IR4002US driver without any user action. The installer will exit without any prompts after successful installation



3. Now plug the dongle ACT-IR2002UL./ ACT-IR4002US It will pop up a Bubble Window : "Installing device driver software", which will display as "USB-Infrared Adapter" after installed successfully as right figure.



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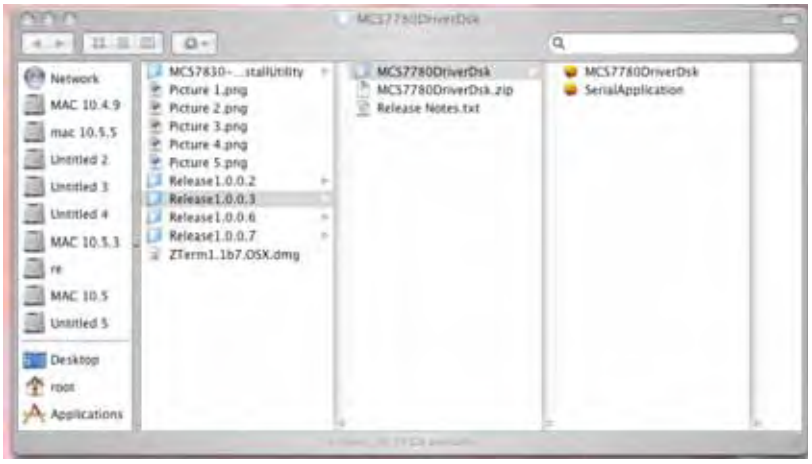
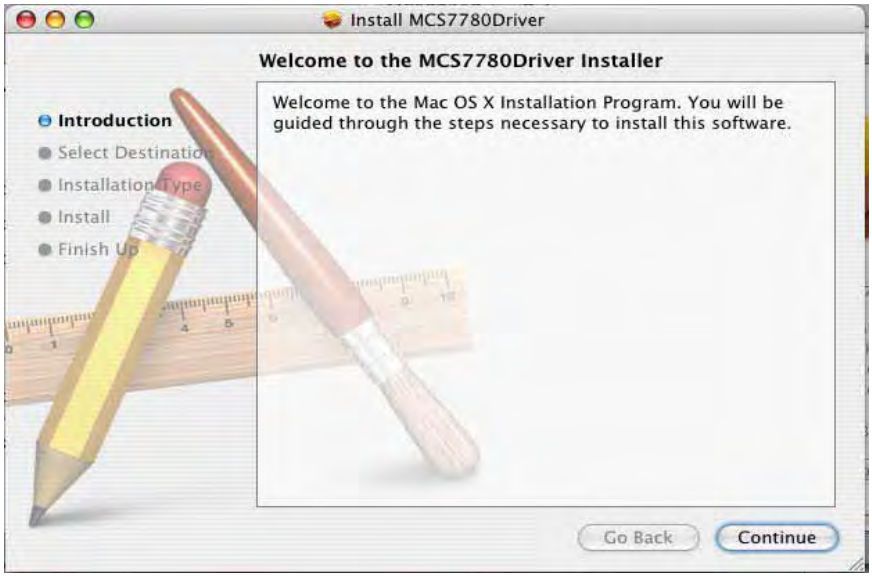
7 DRIVER INSTALLATION FOR MAC OS INTEL BASED PC

IMPORTANT: Please install driver BEFORE you plug in ACT-IR2002UL / ACT-IR4002US to USB port.

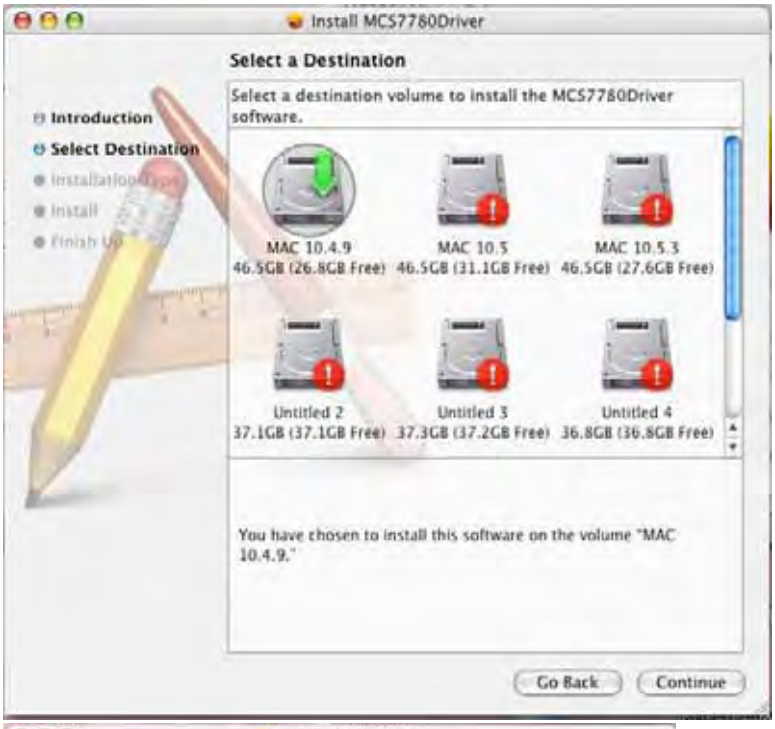
1. Insert the CD, Double click the package file **MCS7780DriverDisk.pkg** for installing the driver or go to Applications and double click the installer and browse for the MCS7780DriverDisk.pkg



2. An installer wizard will popup. Click Continue to start the installation.



3. Select the Destination volume for the software to install. Click "Continue" to start the installation.



4. Click "install" to proceed further.

5. A message window pops up informing that the system requires you to restart the system after the installation. Press "Continue Installation"

Install MCS7780Driver
Installing this software requires you to restart your computer when the installation is done. Are you sure you want to install the software now?
Cancel
Continue Installation

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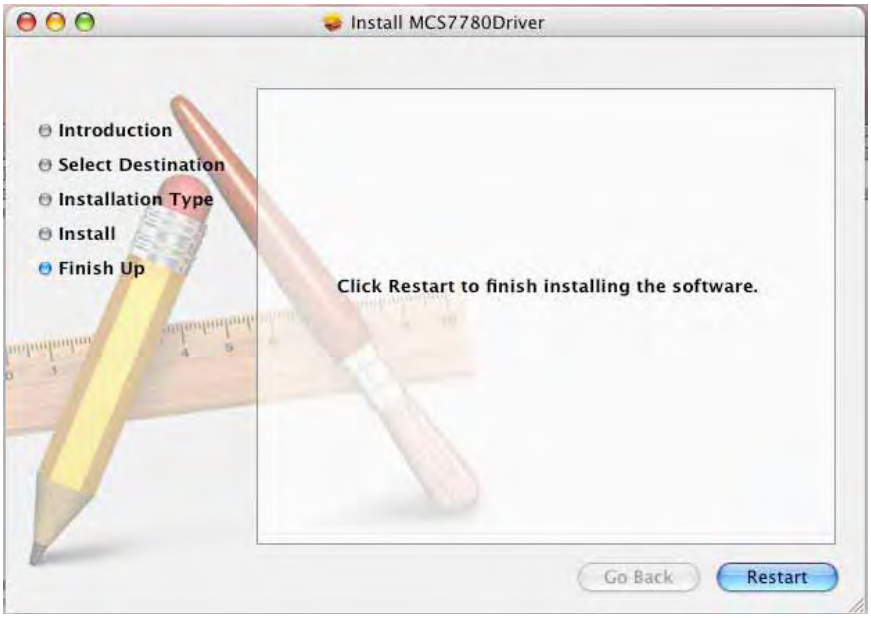
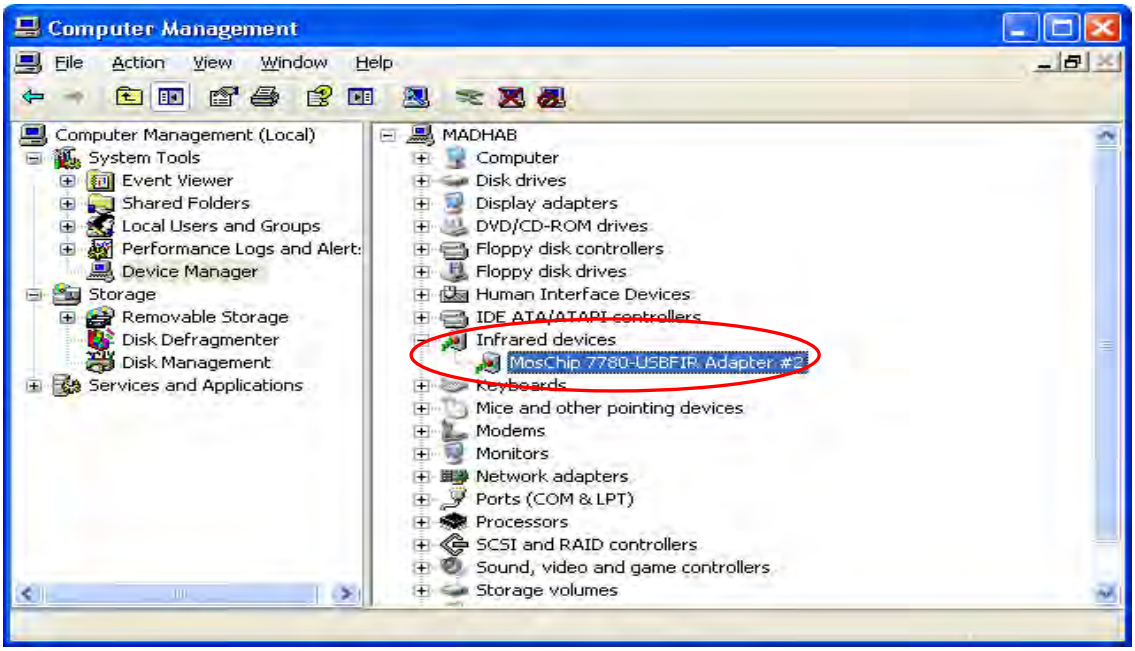
6. Click on "Restart" to finish installing the driver.



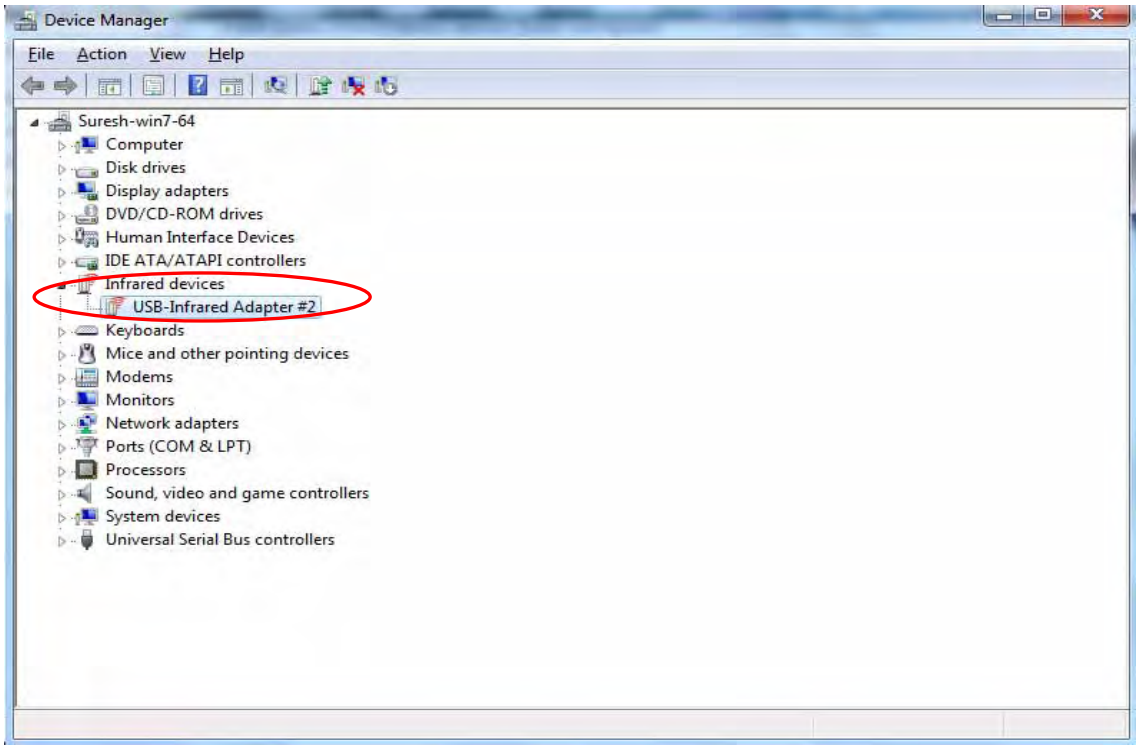
This completes the Installation of the driver.

8 CHECK DRIVER INSTALLATION IN WINDOWS 7/VISTA/XP/2000/ME

From ***Device Manager***, you can see "**USB-Infrared Adapter**" under "**Infrared devices**. This confirms correct detection of ACT-IR2002UL.



Device Manager under Windows Xp



Device Manager under Windows 7/ Vista

9 CHECK DRIVER INSTALLATION IN MAC OS

The driver installation can be confirmed by typing "**kextstat**" in the terminal window.

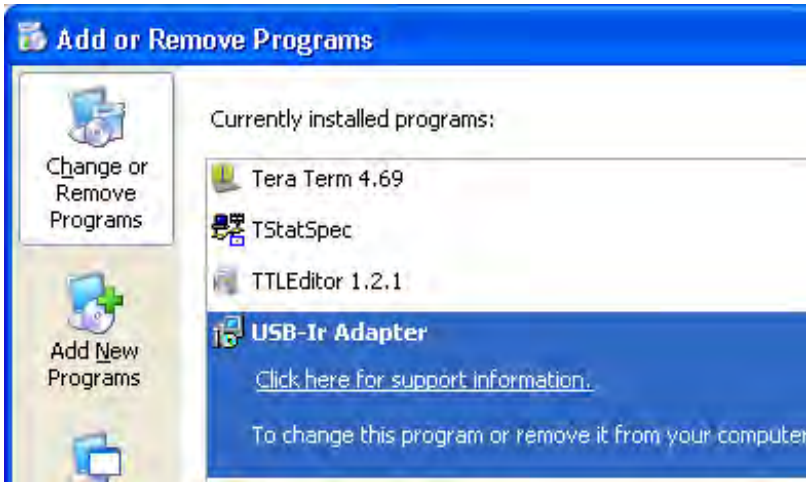
On successful installation, "**com.mosChip.driver.moschipIrDA**" can be seen in the loaded driver.

10 DRIVER UN-INSTALLATION FOR WINDOWS XP

✓ **IMPORTANT: Please keep ACT-IR2002UL/ACT-IR4002US plugged into the computer until prompted to remove it.**

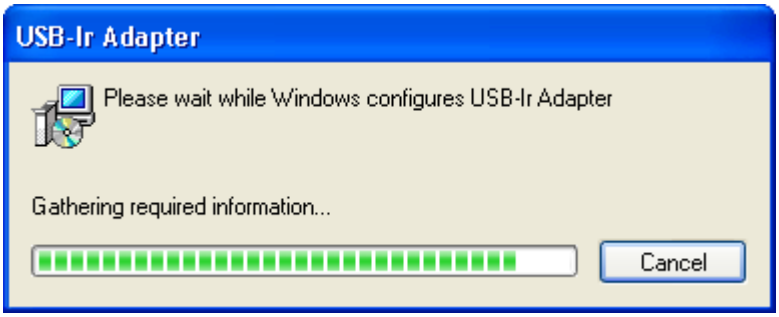
1. Open the **Control Panel** and select **Add or Remove Programs.**

2. Select "**USB Ir Adapter**" from the list. Click **Remove** button to begin the uninstallation process.



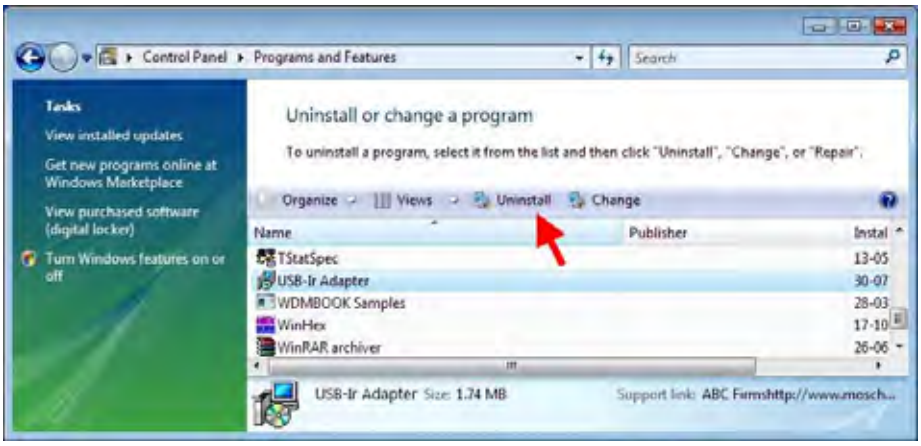
3. To continue, click the **Yes** button to uninstall ACT-IR2002UL / ACT-IR4002US Adapter.

4. It will start the Uninstallation. It will then finish/exit without any further user action.

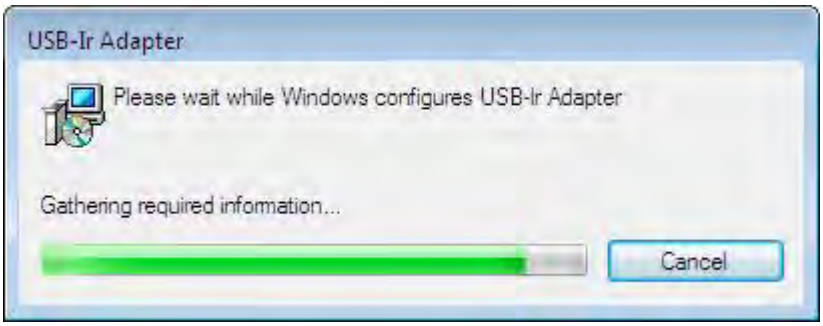


11 DRIVER UN-INSTALLATION FOR WINDOWS 7/VISTA (32 & 64 BIT)

1. From Control Panel =>Programs & Features, select "**USB-Ir Adapter**", click "**Uninstall".**



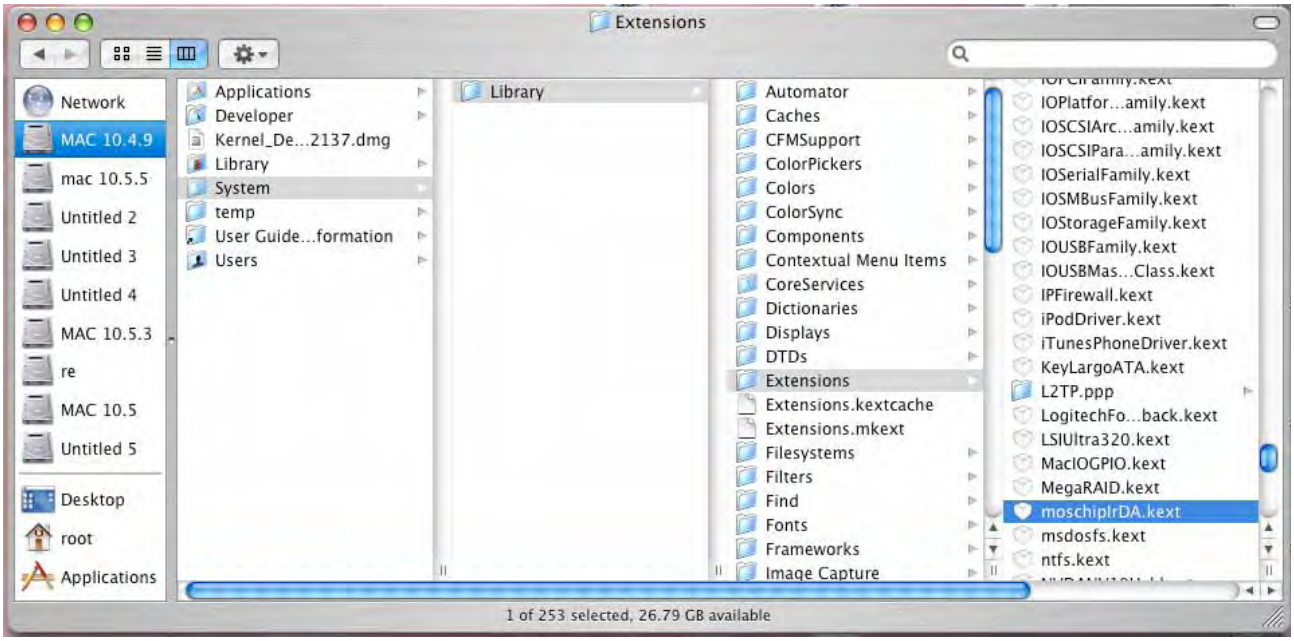
2. It will start the Uninstallation. It will then finish/exit without any further user action.

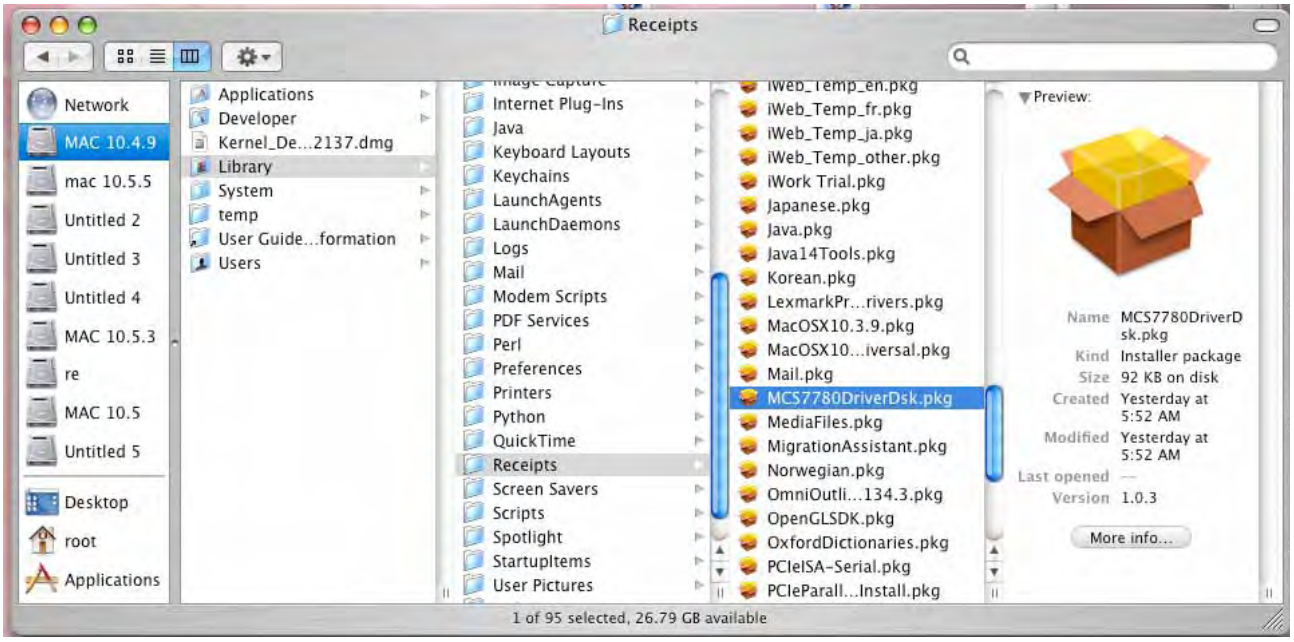


12 DRIVER UN-INSTALLATION IN MAC OS

1. To un-install the driver, **"moschipIrDA.kext", "MCS7780DriverDsk"** files must be deleted from the following location.

2. Finder Current Partition System Library ---> Extensions moschipIrDA.kext (Delete the file / Move to Trash) Finder Current Partition Library ---> Receipts MCS7780DriverDsk.pkg (Delete the file / Move to Trash)





3. Reboot the system to complete the un-installation procedure.

13 MANUALLY UPDATE THE DRIVER IN WINDOWS XP/ VISTA / WINDOWS 7

Sometimes the device may not work due to improper installation or driver conflict or some other reasons. If the driver does not get installed properly, Device Manager may get some yellow color exclamation sign (i.e.⚠) beside "**Moschip 7780-USBFIR Adapter**" OR "**USB Device**". Then user needs to update the driver manually.

1). Go to Device Manager>, right click on already installed driver as shown in below figure 1 and then click **Update Driver**.

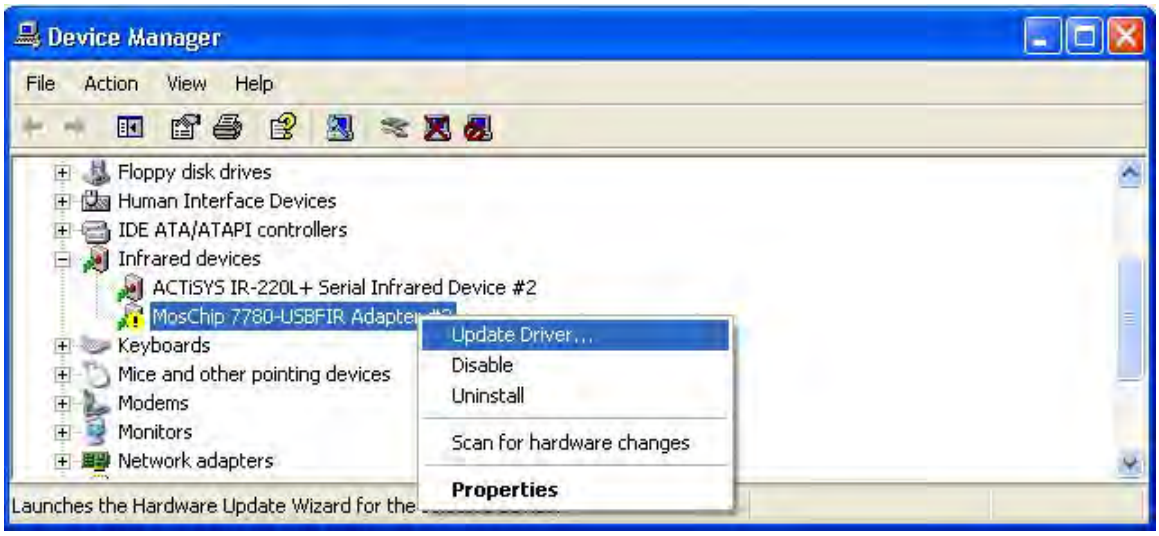


Figure 1: Device Manager – Driver not installed properly

2). Now, as shown in below figure 2 select second option " Yes, this time only" and Click "Next"

Hardware Update Wizard
Welcome to the Hardware Update Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Figure 2: Hardware Update Wizard.

3) Now select the option "Install from a list or specific location (Advanced)" and click "Next".

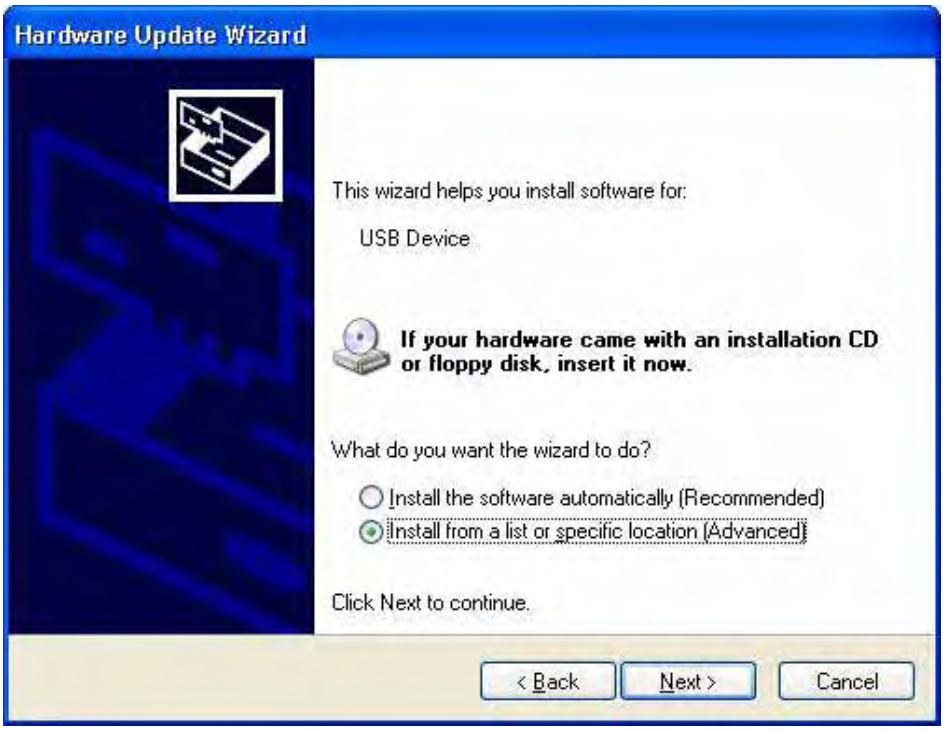

Hardware Update Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Figure 3: Install from a list or specific location

4) Select "Don't Search. I will choose the driver to install" and click "Next".

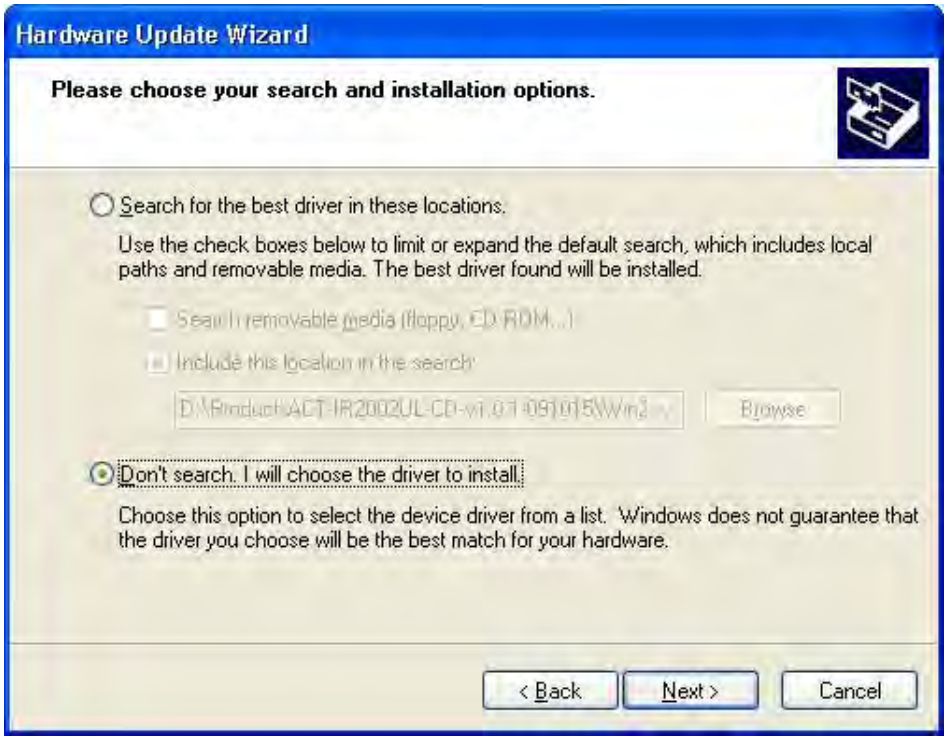

Hardware Update Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Figure 4: I will choose the driver to install.

5) Select "Infrared devices" as Hardware Type and click "Next".

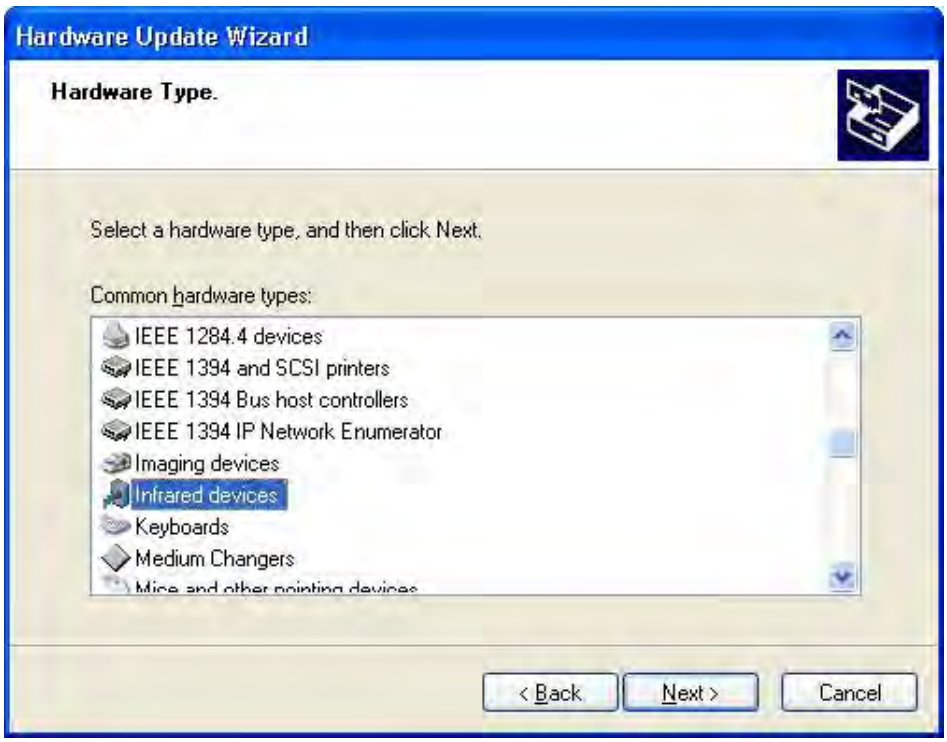


Figure 5: Select Infrared devices as Hardware Type.

6) Click on "Have Disk"

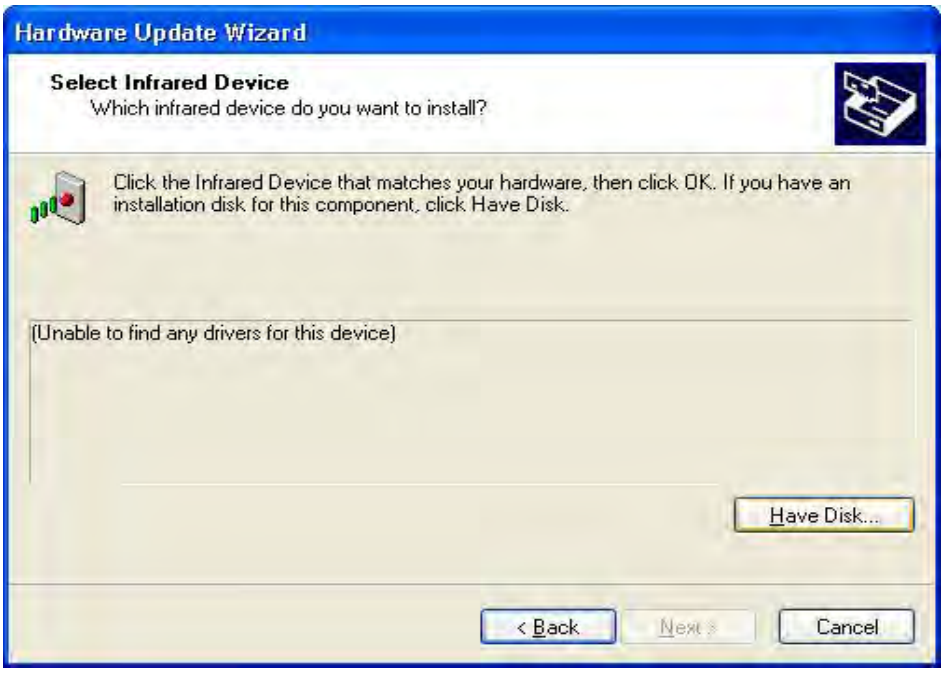

Hardware Update Wizard
Select Infrared Device
Which infrared device do you want to install?
Click the Infrared Device that matches your hardware, then click OK. If you have an installation disk for this component, click Have Disk.
(Unable to find any drivers for this device)
Have Disk...
< Back
Next >
Cancel

Figure 6: Select Infrared Device

7) Now give the location of the driver path. This path depends on where you keep the *inf* and *sys* file for Windows OS (i.e. from the ACT-IR2002UL/40002US CD or your local machine). After selecting new path, click OK.

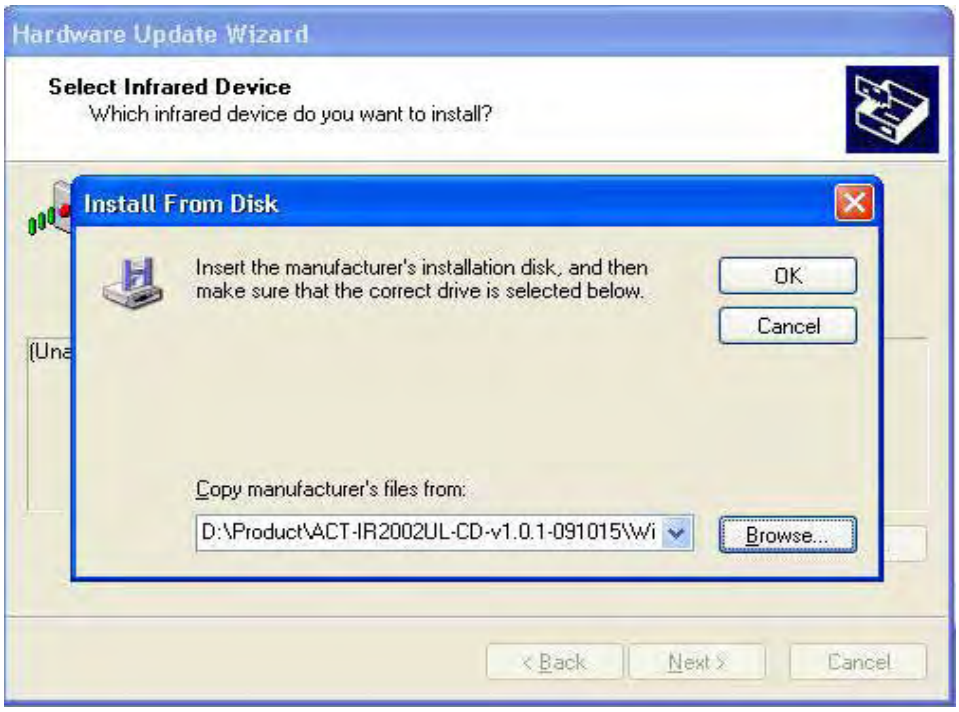


Figure 7: Browse location of driver file.

8) After the update is done, you will get the message: "Completing the Hardware Update Wizard" like as below.

Figure 8: Updated successfully

9) Finally, check Device Manager for new updated driver as shown in below figure.

Figure 9: Check Device Manager for updated driver

14 IrCOMM2K DRIVER AND THE VIRTUAL COM PORT

If you are using USB or serial IrDA device (e.g. ACT-IR2002UL, ACT-IR4002US, ACT-IR2000UL, ACT-IR4000US, ACT-IR220L+) with Windows 2K or above OS **(32-bit OS only)** and want to access IrDA product as a virtual COM port for your application software, then you are required to install **IrCOMM2K driver** to create it.

IrCOMM2K driver is Porting of Linux IrDA to the Windows Kernel and everyone is free to use and redistribute IrCOMM2K as an Open Source project according to the terms of the GPL.

NOTE: Your opposite IrDA device should **support IrCOMM protocol**. Neither RAW-IR nor any other IrDA upper layer protocol could be compatible and hence it will not work.

Please download IrCOMM2K driver from below ACTiSYS website or Third part IrCOMM2K driver developer website and follow below steps to install driver and test with your opposite IrCOMM device.

URL 1: http://www.actisys.com/Downloads.html >> IrCOMM Section

URL 2: http://www.ircomm2k.de/English/download.html

1. Be sure to install your IrDA dongle driver beforehand. If your driver installation is successful then it should display under **"Infrared Device"** in **Device Manager**.

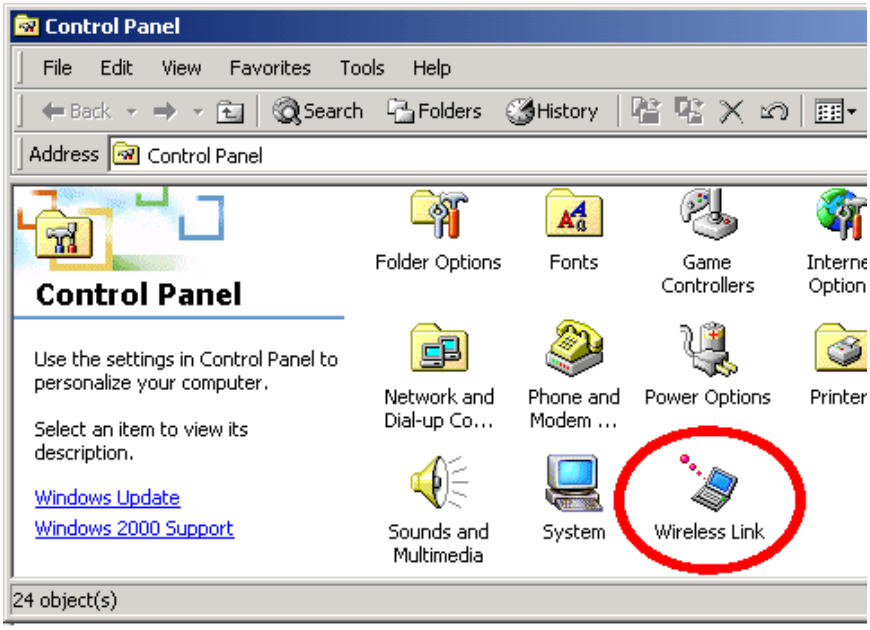
2. Download IrCOMM2K driver from above URL and Installed IrCOMM2K driver (please see manual for

additional detail. URL: http://www.ircomm2k.de/English/manual.html#Install)

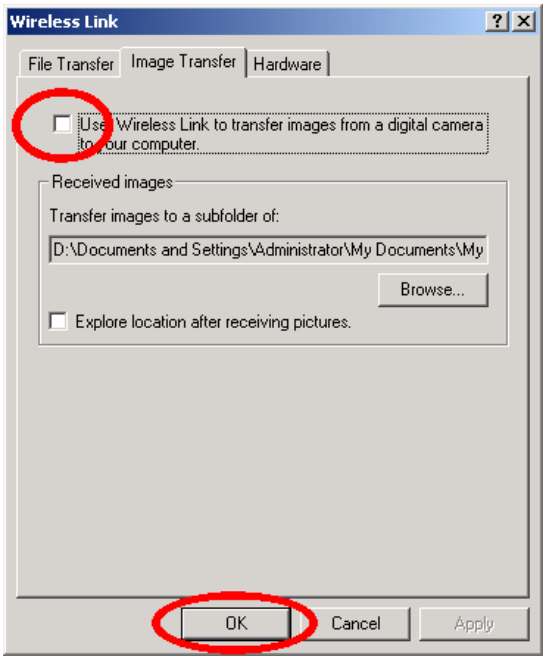
3. During driver installation, it will ask for COM port number. Make sure your selected COM port is free to use and not occupied by any other application.

4. After successful driver installation, you can find " **Virtual IR COM Port (COMx)**" under **Device Manager**.

You can set the driver properties if required. See detail (http://www.ircomm2k.de/English/manual.html#Install at the end).



4. Go to **Control Panel**, click "**Wireless Link**".like above figure.



5. Select "**Image Transfer**" Tab.

The first option has to be de-selected. If you wish, you can de-select the "**File Transfer** option", system tray icon display and sound on "infrared" tab.

6. Open HyperTerminal or other serial terminal software and set the correct COM port and other optional parameters: baud rate, data format, etc.

7. Connect opposite IrCOMM supported device (i.e. PDA, Palm Hot sync, Handheld, etc....) and align IR eye and start data transfer.

If you face any problem or technical question, please contact ACTiSYS Technical Support Team (tech-support@actisys.com)

NOTE1: This third party IrCOMM2K driver is released for **32-bit OS only**. Windows 64-bit OS is not supported. To get IrCOMM support for Windows 64-bit OS, you can refer below Note 2.

NOTE2: Another straightforward **single driver solution** and which is having Windows XP/Vista/Win7 **(32-bit/64-bit)** OS support is another ACTiSYS product ACT-IR100UD (USB interface, virtual IrCOMM support). ACT-IR100UD needs only single driver to install to access Virtual USB COM port. And ACT-IR100UD product serves as complimentary solution to (USB/Serial device driver +IrCOMM2k) driver. ACT-IR100SD is serial interface version of ACT-IR100UD.

Refer product URL: http://www.actisys.com/IrDAProd.html#IR100UD

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15 TROUBLE SHOOTING

For help on general and miscellaneous problems you may be experiencing with your printing, refer to the following pages for possible solutions. Look up your problem and try the solution.

Symptom	Problem	Solution
Can not establish link (General)	1. The two IR devices are not aligned properly. 2. Distance is too near or far. 3. Device is inactivated 4. BIOS setting incorrect 5. Installation is not correct.	1. Properly align them again 2. Move one device to a proper distance. 3. Enable the device by IR monitor. 4. Correct the BIOS Setting. 5. Refer to un-installation guide to remove the device, then install again.
File Transfer between IR-equipped PDA and ACT-IR device-attached host computer stops before finishing up and an error message appears.	The infrared communication is interfered. For example, something blocks out the infrared beam or the burst of string light source, etc.	Check to find out the source of interference and eliminate it before trying again.
The device work well before. But after I unplug it then plug, it does not work again.	Improper unplug and plug procedure	Before you unplug it, you should disable the device. And enable the device after you plug it into your computer
In Device Manager I am getting some yellow color exclamation sign (i.e. "⚠") beside USB Device.	Driver is not installed correctly.	Please refer to Chapter: – MANUALLY UPDATE THE DRIVER IN XP/VISTA / WINDOWS 7

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16 SPECIFICATION

- **Compatibility:** Fully compliant to USB specification 1.1 and IrDA specification 1.4
- **Communication speed and Distance:**

  SIR (9.6, 19.2, 38.4, 57.6, 115.2 kbps): 1-158 cm;

  MIR 1.152 Mbps : 1-158 cm

  FIR (4 Mbps): 1-100 cm;

- **Connection:** Standard USB connector Type A.
- **Power Source:**

  Obtain power from USB port. No external power supply required.

- **Electrical Specification:**

	Parameter	MIN.	TYPICAL	MAX.	Units
ACT-IR2002UL	USB supply voltage	4.75	5.0	5.25	V
	Stand By (Plug-In Non Active)	20	20	20	mA
	Active (Receiving)	20	20.8	21	mA
	Active (Transmitting)	53	56	58	mA
ACT-IR4002US	USB supply voltage	4.75	5.0	5.25	V
	Stand By (Plug-In Non Active)	20	20	20	mA
	Active (Receiving)	21	22.6	23	mA
	Active (Transmitting)	34	45	46	mA

- **Dimension:**

	L	W	H	Units
ACT-IR2002UL (build-in USB cable excluded.) / (build in USB cable included)	62 (2.44) /1245 (49)	36 (1.42)	19 (0.75)	mm (in.)
ACT-IR4002US	47 (1.85)	18 (0.71)	9 (0.35)	mm (in.)

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- **Weight:**

	Weight	Units
ACT-IR2002UL (build in cable included.)	45.6 (1.6)	g (Oz)
ACT-IR4002US (USB cable excluded)	6.0 (0.2)	g (Oz)

- **Operating Temperature:** 0° C to 60° C
- **Storage Temperature:** -20° C to 85° C

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17 PRECAUTIONS

To ensure trouble-free operation, please observe the following precautions:
Optical communications are easily affected by external light sources, weak batteries, transfer distance, transfer angle, etc. Any of these conditions may cause a data transfer failure, incomplete, missing or incorrect data. Make sure that the wireless interface is away from direct sunlight and other strong light source.

- Do not terminate arbitrarily during file transfer process between DUT and computers until finished. Otherwise DUT internal data integrity may be damaged, which is due to the violation of DUT's.
- Do not expose the unit to moisture, as this will damage the internal circuitry.
- Do not expose the unit to extreme temperatures. It should not be placed in direct sunlight or in a closed vehicle, neither should it be placed near heaters nor other heat sources.
- Do not store the unit in a humid or dusty place.
- Use a soft, dry cloth to clean the unit. Do not use a wet cloth or any solvent.
- Do not drop the unit or handle the unit carelessly.

CAUTION:

- Never touch the pins of computer connection terminal. An Electro Static Discharge can damage the internal circuits. If this device requires any servicing, use only an ACTiSYS service dealer, an ACTiSYS approved service facility, or an ACTiSYS repair service.
- When exchanging data with host computer, be sure the appropriate serial communication port is available and is not in conflict with other peripheral device or software.

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18 WARRANTY INFORMATION

ACTiSYS Corporation warrants the first end-user purchaser, for a period of 1 year from the date of purchase, that this wireless interface (The Product) will be free from defective workmanship and materials, and agrees that it will, at its option, either repair the defect or replace the defective Product or part thereof at no charge to the purchaser for parts or for labor.

This warranty does not apply to any appearance items of the Product, any consumable items such as paper, ink ribbon, or batteries supplied with the Product, or to any equipment or any hardware, software, firmware, or peripheral other than the Product. This warranty does not apply to any Product the exterior of which has been damaged or defected, which has been subjected to misuse, abnormal service or handling, or which has been altered or modified in design, construction or interfacing. Tampering with Label Voids Warranty.

In order to enforce the rights under this limited warranty, the purchaser should mail, ship or carry the Product, together with proof of purchase, to ACTiSYS.

The limited warranty described above is in addition to whatever implied warranties may be granted to purchasers by law. To the extent permitted by applicable law, ALL IMPLIED WARRANTIES INCLUDE THE WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR USER ARE LIMITED TO A PERIOD OF 1 YEAR FROM THE DATE OF PURCHASE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

Neither the sales personnel of the seller nor any other person is authorized to make any warranties other than those described above, nor to extend the duration of any warranties beyond the time period described above on behalf of ACTiSYS. Corporation.

The warranties described above shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and for the period of time described above, shall constitute full satisfaction of all claims, whether based on contract, negligence, strict liability or otherwise. In no event shall ACTiSYS Corporation be liable or in any way responsible, for any damages or defects in the Product which were caused by repair or attempted repairs performed by anyone other than ACTiSYS technician. Nor shall ACTiSYS Corporation be liable or in any way responsible for any incidental or consequential economic or property damage. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you.

FOR YOU RECORDS

For your assistance in reporting this product in case of loss or theft, please record below the model number and serial, which are located on the bottom of the case. Please retain this information.

Model Number:	**Serial Number:**	**Date of Purchase:**

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19 CONTACT INFORMATION

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